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QUEBEC AND LAKE SUPERIOR
Mining Association.

Can. Quebec & Lake Superior
Pam. Mining Assoc.
REPORTS AND STATEMENTS

RELATIVE TO THE PROPERTY OF THE

Quebec and Lake Superior

MINING ASSOCIATION,

COMPRISING

OVER FORTY SQUARE MILES,

SITUATED ON

LAKE SUPERIOR,

CANADA.



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INTRODUCTORY REMARKS.

The object of the present pamphlet is to bring under the notice of parties interested the more important facts connected with the large and valuable properties of the Quebec and Lake Superior Mining Association. Such recorded facts and statements, being scattered through various treatises, reports, letters and other authentic documents, are here presented in a concise form; but reference is invited to the originals for verification.

The Copper-Mining region of the south shore of Lake Superior, in the State of Michigan, is well known to be among the most important and productive in the world; and many of the mines established there have yielded, and still continue to yield, enormous profits.

In this remarkable region the metal occurs almost entirely in the native form, and disseminated throughout beds of considerable thickness. Such beds, however, are frequently associated with true or fissure-veins, in which occur masses of native copper of every variety of size, up to, in one instance, 600 tons weight. In the early history of mining enterprise here, such masses formed the principal objects of search; but of late years it has been discovered that the thick and persistent beds containing the metal disseminated in finer particles are more profitably and regularly available; and this fact has given a great stimulus to mining industry on the south shore.

In reference to this fact the following quotations from a recent able pamphlet on "The Copper Mines of Lake Superior," by O. D. Ashley, Esq., of Boston, are important and suggestive: "The fact is thus established, that mines economically and judiciously worked, and producing but one and one-half

per cent. of copper, or thirty pounds of metal to two thousand pounds of stamp stuff can pay good returns upon money invested, with copper ruling in market value much below present prices." Again, "In this connection it is worthy of note that Lake Superior copper, from its better quality and adaptability for special purposes, commands a price from three to four cents per pound higher than that imported."

After detailing the astonishing results from the working of the Calumet and Hecla Mine, the same author observes: "The great, all-important facts are, that we have these rich developments, and that the profits are obtained *almost entirely from stamp rock* which, a few years since, would have been rejected unless accompanied by masses and barrel-work. When the Cliff mine was at the height of its prosperity, it is stated upon good authority that the orders of the mining agent were to throw away stamp-rock not yielding over three per cent. There is encouragement enough in these great successes to put life into every copper mine in Lake Superior which can be proved by exploration to be worthy of opening, and in time this will be more forcibly impressed upon capitalists by further developments."

On the north or Canadian shore of Lake Superior, and on some of the adjacent islands, the copper-bearing rocks which have proved so productive on the south shore also occur, although to a more limited extent, and hitherto only very partially and imperfectly developed.

The Quebec and Lake Superior Mining Association have secured and now hold by patent direct from the Crown, but exempt from all rents, royalties or dues, the choicest locations comprised within this mineral tract on the Canadian side of the boundary line. The title-deeds cover, in all instances, the right of soil, as well as of minerals. These locations, which will be found fully described and detailed in the sequel, comprise in the aggregate 26,000 acres, or upwards of FORTY SQUARE MILES of land, as laid down on the accompanying maps and plans.

On all these locations highly promising discoveries of metaliferous veins and deposits have been made, although hitherto explorations for that purpose have been very partially and imperfectly carried on. The metal which occurs in greatest abundance is copper, both native and in the form of sulphurets; but important discoveries of silver, nickel and uranium ores have also been made.

The Association, shortly after its first organization, expended considerable sums in exploring and testing their properties; but confined their researches chiefly to the sulphurets of copper, and neglected the native metal found in the beds, and the other ores above mentioned. Recent experience on the south shore has proved the comparatively low-grade cupriforous beds to be much the most important and valuable source of this metal in the Lake Superior region. On one of the locations belonging to the Association, in addition to a great, though undetermined, thickness of somewhat lower yield, a bed at least three feet in thickness, carrying from two and a half to five per cent. of native copper, has been discovered. Such a bed, in those early days, was considered too poor to pay for working; but at the present time, it has been fully established that *one per cent.* of copper can be extracted from such deposits with profit.

At the request of the Geological Commission of Canada, specimens of native copper from the property of the Association on Michipicoten Island have been forwarded to the Centennial Exhibition at Philadelphia.

Regular communication is at present maintained with both north and south shores of Lake Superior by lines of steamers in summer; and a railway is now under construction, and will shortly be in operation, which will bring this region within twenty-four hours of Montreal.

In accordance with the recommendation of Dr. Sterry Hunt, the Association last fall, placed a party of miners at the "Quebec Mine" on Michipicoten Island, where they are now at work taking out ore. What is believed to be an important

discovery of native copper in a bed of conglomerate was made late last season, about one and a half mile west of the Quebec Mine, and will be opened on in the spring.

Any further particulars may be obtained from the undersigned.

W. W. STUART,

President Q. & L. S. M. A.

January, 1876.

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REPORT

ON THE PROPERTY OF THE

Quebec & Lake Superior Mining Association.

By DR. T. STERRY HUNT, F.R.S., F.G.S.

INSTITUTE OF TECHNOLOGY,
BOSTON, 5th December, 1872.

TO THE SECRETARY Q. & L. S. M. A. :

SIR,—The property of your Company, on Lake Superior, which I visited and examined last summer as well as my time would permit, consists of the following areas:

On Mamainse	6,400 acres.
On Point-aux-Mines.....	6,400 "
On St. Ignace Island.....	6,400 "
On Michipicoten Island.....	6,800 "

26,000 acres.

This extensive domain, of more than forty square miles, has as yet, from its size and its thickly-wooded surface, only been examined along its shores ; and the few attempts to work the deposits of copper which have there been found were, for the most part, undertaken without the experience since acquired

by the miners on the south shore of the Lake, to which it will be necessary to refer before we can rightly understand the nature or the great value of the Company's mining lands.

The mineral formation of the Keweenaw peninsula, on the south side of Lake Superior, the richest and most productive copper region in the world, is there confined to a small area, and is represented on the Canadian side of the lake only by the similar formations at the localities above named and some other locations adjacent; so that the forty square miles held by the Company embrace a large proportion of the whole known area occupied by these copper-bearing rocks in Canada. This formation on the south shore is remarkable for the fact that, for the greater part, it holds the copper, not in proper lodes, or veins, but disseminated through beds of rock, generally soft and earthy, and not conspicuous at the surface; so that in the early attempts at mining they were overlooked, until experience had taught explorers to trace out and identify them. Since the value of these deposits has been understood, the production of copper, which here occurs in the native or metallic state, and is extracted simply by stamping and washing, has rapidly increased.

In 1870 it amounted to 11,300 tons; in 1871 to 14,460 tons; and in 1872 will much exceed the latter figure. A single mine in this region, the Calumet and Hecla, will yield 8,000 tons of copper this year, and divide \$3,000,000 (*three millions of dollars*) among its proprietors.

So simple is the process of working these deposits, that a bed of sufficient thickness, yielding one per cent. of copper, will give a profit, even at prices considerably below the present rate of copper. Some of the beds afford as much as five per cent. of copper.

The complete identity of the copper-bearing formation of the south shore with that of the Company's lands is clearly established geologically; and the presence of deposits of native copper in them, similar to those there wrought with such profit, has been demonstrated.

At the time when the Company spent some money in mining experiments on these lands, their attention was, however, directed, not to the deposits of native copper, but to the veins of sulphuretted ores, which are disregarded on the south shore.

From my own observations along the whole of the outcrops of the Company's lands, I cannot doubt that the proper working of these copper-bearing beds, already known at Pointe-aux-Mines and Michipicoten Island, and of others which the analogies of the south shore lead us to believe will yet be discovered, will result in the development of a copper region of great productiveness and value.

The true course for the owners of this large property, which has so long lain unproductive is to avail themselves of the experience acquired in the copper region of the south shore; and any plan which will effect this cannot fail to be most advantageous. In that region the lands were sold to mining explorers in small lots of 160 acres; and some of the most productive mines there do not occupy a greater area than this.

Whatever plan is adopted to secure a dividing-up of the lands, and the effectual exploration of the great areas belonging to the Company, I cannot doubt that the results will be such as will prove greatly remunerative, and build up at the locations of the Company important mining industries.

I therefore earnestly recommend that the Company should secure, at an early date next season, the services of skilled south-shore explorers and miners; and also attempt the working on an adequate scale and with proper appliances, of the copper deposit at the so-called "Quebec Mine" on Michipicoten Island, which, from the reports of the working by Mr. Fletcher, may be expected to yield a large margin for profit; the proportion of native copper being estimated at two and a-half per cent. of the rock.

The frequent and regular lines of steamers have now made this region readily accessible, and the time has come to make available this splendid domain of the Company. It will be

their own fault if, with the facts before them, they do not attempt the development of its mineral wealth, so long neglected.

If the resources of capital, with energy and skill, are applied to this region, as they have been for the past few years to the south shore, I cannot doubt that as great results may be achieved.

Your obedient servant,

T. STERRY HUNT.

EXTRACTS

FROM THE

"GEOLOGY OF CANADA—1863."

BY SIR WILLIAM E. LOGAN, LL.D., F.R.S., F.G.S.

Referring to the location at Mamainse, after describing the geological formations, &c., Sir William remarks, (pages 700-704):

"According to Dr. Dawson, to whom this description is due, the principal deposit of native copper occurs in a fissure running nearly north and south, along the summit of the ridge of hard semi-crystalline greenstone, III. The greatest breadth of this fissure is about six inches; and in some parts it is nearly filled with native copper, which occurs in a vein-stone of calc-spar and quartz. A shaft was sunk here to the depth of twenty-seven feet, without galleries, and yielded about a ton of native copper; the largest mass weighing 600 pounds. The shaft was sunk upon an excavation which seems to have been the work of some aboriginal miners. A little to the west of this, the vein of native copper divides into two parts."

"About a hundred yards from the shaft, excavations have been made at the intersection of two veins, one running north-west and the other north. The former is unproductive; but the latter, which is six inches in width, contains small masses of variegated copper and a little copper pyrites, in a gangue of

quartz and calc-spar. About thirty yards farther to the east is another vein, running north-east, and wider than the others. It is very irregular in its width; and it contains, besides the two ores just mentioned, a little native copper. At the place where it has been opened, one of the walls of the vein is of amygdaloid, and the other of compact trap, indicating apparently a fault in the strata."

"On the north side of the Bay, at Mamainse, a vein of calc-spar, three or four feet wide, rises from the water, cutting the upturned strata, and after crossing a part of the location of the Montreal Mining Company, appears on the adjoining one belonging to the Quebec Mining Company, where it was found by Mr. Fletcher to contain sulphurets of copper in considerable quantity. On the north-west corner of this location, a vein of calc-spar rises from the shallow water of the lake, and is seen on the shore cutting an inclined band of conglomerate. This vein is described as containing argentiferous galena and copper pyrites. On the Meredith location, belonging to the Montreal Mining Company, three veins of calc-spar and laumontite, contained variegated copper ore and galena. The lead from the latter yielded thirty ounces of silver to the ton. An open cutting, twenty feet long and four wide, supposed to have been made by early French explorers, was found upon this vein, near the lake; and when discovered a few years since, the marks of the drills were still visible upon the rock. Other pits, apparently of a similar origin, were found several hundred feet to the east of the cutting, on what appeared to be another small vein, in which no ore could be detected. The beds of tufa in this vicinity sometimes contain native copper in fine grains, and in pieces an ounce in weight. At Mamainse also occurs the vein of *uranium ore* described on page 504. It is evident, from these abundant metalliferous indications, that this locality is deserving of further and careful exploration."

"At Pointe aux Mines, eight miles to the north of Mamainse Island, several interesting veins are met with, and trials of

some of them were made a few years since by the Quebec Mining Company. At the base of the point, according to Mr. Willson, a shaft has been sunk to the depth of seventy feet, on a small vein running east and west. Its gangue consists of calc-spar, with quartz and mica, containing small quantities of native copper with the yellow and variegated sulphurets, and occasionally small scales of native silver. About 120 fathoms north of this shaft, on the pathway leading to the miners' houses, are two parallel veins, from three to four feet wide, and four or five yards asunder. They exhibit, at the surface a large amount of gossan, with some green carbonate and vitreous copper ore. About half way down the point, and eighty fathoms from the water, at the foot of a bluff, occurs a vein, eight or ten inches wide, which contains a considerable proportion of vitreous copper ore, and zinc blende. Near to the end of the point, on the south side, a similar vein is found, which, in addition to blende and vitreous copper, contains small amounts of copper pyrites. The ore, which is unmixed with gangue, hangs from the west wall; while an open space of four or five feet intervenes between it and the east or foot wall, which is at the level of the lake. It would seem probable that this space was once filled with some vein-stone, which has been washed out by the waters of the lake. Some early miners, probably the French, had blasted out a considerable quantity of the ore from this vein; and about three tons of blende,* left by them, are said to have been found in the chasm."

"On the north side of the Pointe aux Mines, in Mica Bay, the quartzose gneiss is described by Mr. Willson as being overlaid successively by a bed of grey tufa, one of greenstone, and one of a reddish-brown tufa, all dipping to the north at an angle of about fifty degrees. Between the greenstone and the underlying tufa, were found rich bunches of vitreous copper ore, seven or eight inches in thickness; but on sinking to a

* This ore after chemical examination proved to be nearly pure vitreous copper, which contains 80 per cent. of the metal.

distance of ten fathoms, the ore was found sparingly diffused through a thickness of eight or ten feet of the rock. A considerable sum of money was here expended by the Quebec Mining Company, and a quantity of rich ore obtained. Three shafts were sunk, and an adit was driven 200 feet; but the working was finally abandoned. The reddish tufa contains disseminated a small amount of native copper; but a shaft of seventy feet sunk in it, showed a quantity too small to be remunerative."

"The island of Michipicoten may be next noticed. On the north side of this island there is a considerable mass of greenstone and amygdaloid interstratified with sandstones, the whole dipping eastwardly. Towards the west end of the island, the rocks present a low surface for a breadth of four or five hundred feet, and then rise into a cliff two or three hundred feet in height, in which the greenstone is marked by druses containing analcime and quartz. A soft amygdaloidal bed holding native copper, is traceable for some miles along the shore, sometimes beneath the surface of the water in the bays, and again running a little distance inland. In this bed, in the North Bay, an attempt was made, a few years since, to work a remarkable deposit of native copper and silver, which were found disseminated in grains through a green hydrous silicate of nickel. The ore being stamped, the nickel, whose value was not suspected, was washed away from the residue of native metals, which gave, in one trial, twelve parts of silver and eighty-eight of copper. A shaft was sunk here to a depth of seventy feet; but after a considerable outlay the working was abandoned. Nothing very definite is known as to the mode of occurrence of this curious metallic deposit, which is stated, however, to have been associated with calc-spar. From the same mine were said to be obtained the specimens of mingled arseniurets of nickel and copper, which, with the preceding nickeliferous ore, are noticed on page 506, and again on page 737. At a point near the west end of the island, and about seven miles from the working just mentioned, the cupri-

ferous stratum again appears, and fragments of the native metal are scattered along the shore. Mining operations on a small scale were undertaken here ten years since by the Quebec Mining Company; and a shaft was sunk at a little distance from the shore, by which the copper-bearing beds were reached at a depth of forty-five feet. The mine is now leased to Mr. Hugh R. Fletcher, who is engaged in working it, and has kindly furnished the following particulars. Beneath the principal copper-bearing bed, is a soft argillaceous rock known as an "*Ash-Bed*," which is six feet, and perhaps much more, in thickness, and is underlaid by a massive greenstone. The ash-bed itself contains from one half to one per cent. of disseminated metallic copper, which it is supposed can be economically extracted by crushing and washing the soft rock. Upon this reposes the principal copper deposit. The metal is found in a bed of greyish amygdaloid of from eight to eighteen inches in thickness, and an overlying bed of sandstone of from twelve to twenty-four inches; the united thickness of the two being on an average about three feet. The proportion of copper is the same in the two rocks, and averages two and a half per cent. The copper is in larger grains in the amygdaloid and is sometimes surrounded by calc-spar; while in the quartzose sandstone, it is in fine particles, or in filaments. Small specimens of the sandstone are occasionally found containing ten or fifteen per cent. of copper. This bed is overlaid by a massive compact greenstone, to which succeed amygdaloid and conglomerate. The dip of the copper-bearing stratum is about three feet in a fathom. Three shafts have been sunk upon it, one to sixteen fathoms, one to twelve and a half, and a third to eight and a half fathoms. From 300 to 400 tons of two and a half per cent. ore have been raised; and in the spring of 1863 it is proposed to commence operations on a larger scale, with proper machinery. Small portions of native silver and of vitreous copper ore have been found in this vicinity; and according to Mr. Willson, native copper occurs in a second band of amygdaloid about a mile and a half south

of Mr. Fletcher's mine, and two hundred feet above the surface of the lake. Vitreous copper ore is also found with calc-spar and sulphate of barytes on the eastern extremity of the island in a reddish porphyritic rock, near which occurs a pitchstone-porphry, and pitchstone with veins of agate."

The analysis of some specimens of the ores obtained at Michipicoten Island are thus given by Dr. T. Sterry Hunt, at page 506 of the same work :

"Two ores of nickel were discovered a few years since in a vein cutting a bed of amygdaloid on Michipicoten Island. The first of these is a brittle massive ore, associated with quartz, and having a brilliant metallic lustre, and a color varying from tin-white to bronze yellow. Its hardness is 5.0, and its specific gravity from 7.35 to 7.40. This mineral is variable in composition. The results of four analyses were as follows :

	I.	II.	III.	IV.
Arsenic,.....	37.36	44.67
Copper,.....	44.70	30.81	27.60	10.28
Nickel,	17.03	24.55	27.29	36.39
Silver,.....	0.25	0.21
	99.09	100.28

It would appear from calculation that these varying results are due to mixtures of copper-nickel or nickeline, which consists of 44.1 of nickel and 55.9 of arsenic, with the arseniuret of copper—domeykite—which contains 71.7 of copper and 28.3 of arsenic. The nickel from this ore contains traces of cobalt."

"The second ore, said to be from the same mine as the preceding, occurs as the gangue of native copper and native silver, which are scattered through it in grains. The mineral is amorphous, greenish-yellow or apple-green in color, with a waxy lustre and a conchoidal fracture. It is very soft, polishing under the nail, and falling to pieces when immersed in water. It is decomposed by acids, and is found to be essentially a hydrated silicate of nickel. The analysis of one specimen

dried at 212° F. gave silica 33.60, oxyd of nickel 30.40, protoxyd of iron 2.25, lime 4.09, magnesia 3.55, alumina 8.40, water 17.10 = 99.39. Another specimen dried at a higher temperature, yielded silica 35.80, oxyd of nickel 32.20, water 12.20. It contains, besides, traces of cobalt and copper, and appears to be identical with the nickel-gymnite of Dr. Genth. A third specimen, which contained small grains of the native metals disseminated, gave silver 2.55, copper 18.51 and oxyd of nickel 20.85."

At page 737, the following further statements referring to ores found on Michipicoten Island occur :

"These results have been confirmed by Prof. Whitney ; who, on visiting the locality, found this ore" [the arsenical nickel] "in the form of nodules, having a concentric structure, and imbedded in coarsely crystalline calc-spar. These, according to him, were irregularly distributed in the trappean rock, and did not form a regular vein. He found in two specimens, respectively thirty-one and thirty-three per cent. of nickel. Of the second nickel ore from the same locality, already described as a greenish earthy silicate of nickel, and yielding about twenty-four per cent. of nickel, little is known, except that the specimens brought from the mine were filled with small grains of native copper and of native silver ; and that large quantities of the green earthy material were said to have been crushed and washed to obtain these metals, the valuable ore of nickel being lost in the process."

EXTRACTS

FROM THE

"DESCRIPTIVE CATALOGUE OF CANADIAN MINERALS SENT TO THE LONDON EXHIBITION OF 1862,"

By SIR W. E. LOGAN, F.R.S.

Referring to specimens of Copper from Michipicoten, after describing the rock formations, the following remarks occur, page 17, No. 2:

"Native copper, associated with a little silver, is disseminated in several parts of the mass, and these more particularly characterise an amygdaloidal bed, two feet thick, which is underlaid by a band of sandstone, and has been mined to a small extent by the Quebec Mining Company. In this bed the copper is distributed in irregular nodular masses of various sizes, from grains no larger than snipe shot, to fantastic forms of five and six inches in diameter; the quantity of metal in the bed being, according to Mr. J. L. Willson, equal to about five per cent. Small nodules of calc-spar occur with those of copper. About seven miles to the north-eastward, the bed is cut by a vein, in which copper and silver appear to be associated with ores of nickel, in the forms of a silicate of nickel, containing twenty-five per cent. of the metal, and of a mixture of the arseniurets of nickel and copper, containing between seventeen and thirty-seven per cent. of nickel. These ores were detected by Dr. Sterry Hunt in the refuse thrown aside in a crop-trial made on the bed, by Mr. Bonner in 1854; and it is said that a considerable quantity of the silicate of nickel was thrown into the lake, after being stamped and washed, for the purpose of extracting from it the native silver."

Referring to specimens of native copper from a lode on the Island of St. Ignace, after describing the geological characteristics of the veins there found, the following facts are stated:

"Among these substances are disseminated masses of vitreous copper accompanied with silver. These veins, variously modified, can be traced to the westward" [through the property of the Association] "for nine miles along the whole length of St. Ignace Island, carrying native copper and native silver, with the vitreous sulphuret of copper, in greater or less quantity the whole way."

EXTRACTS FROM LETTERS.

By Mr. J. L. WILLSON, *Supt. Q. & L. S. M. A.*

ONTARIO, 21st July, 1859.

"Michipicoten Mine will turn out much more valuable than I ever believed it could. It is in the volcanic ash. There is a band of the volcanic ash at Mamainse."*

ONTARIO, 14th December, 1860.

"Since I have been engaged in examining and reporting upon the mines on the south shore of Lake Superior, I am convinced all the explorations on our side have been without knowledge, and I can say the same thing of the south shore. The explorations have all been made for true veins (veins of dislocation). It now appears that the native copper is in the volcanic ash, which forms belts of rock parallel to the ranges; veins of shrinkage cutting these at an angle contain the large masses of copper, while the ash contains the small masses and stamp work."

*Dr. T. Sterry Hunt, in a more detailed account of his explorations, made in 1872. and referred to by him on page 7, mentions the existence of a similar copper-bearing ash-bed at the Pointe-aux-Mines location, belonging to the Association.

"Last summer Mr. Fletcher shipped to the smelting works at the Bruce Mines all the ore taken from the trial-shaft sunk by me on Michipicoten Island, without even hammer-dressing. I was told by a miner from the Bruce that it turned out a large quantity of copper."

By MR. H. R. FLETCHER, M.E.

BRUCE MINE, 1st December, 1860.

"I took away about 45 tons of stuff from Michipicoten, about half of which I have smelted. The result has been very satisfactory. It was undressed and yielded of fine copper about three per cent."

BRUCE MINE, 25th August, 1861.

"I have just refined and packed for shipping by to-day's boat the first small lot of stuff from this year's working, on Michipicoten Island. I smelted it as it was, hand-dressed, in order to be able to make a report on the subject. It turned out, hand-dressed, seven and an eighth per cent."

EXTRACTS

FROM REPORT

By THOMAS WALLIS HERRICK, Esq., P. L.S.,

ON MAMAINSE LOCATION.

Mr. Herrick describes minutely not less than twenty-one metalliferous veins found on a location adjoining that of the Q. & L. S. M. A. Of one of these (No. 8) he says:

"This vein shows on the face of a cliff, about 15 feet in height, of dark colored trap. It averages about two feet in width, and carries a considerable quantity of the sulphuret of copper, together with copper-glance in green epidote and quartz. A coating of cobalt-bloom, (the arseniate of cobalt)

is found on most of the specimens taken out. The ore, judging from its rich color and softness, probably contains a larger than ordinary percentage of copper, for ore of its kind. This vein is about 200 feet outside the Company's land," [i.e. on the property of the Q. & L. S. M. A.] "and runs in a direction nearly parallel with their northern boundary. The specimens sent down were taken off the surface by myself in a couple of hours with a small pick. To this vein I would direct attention, as being worthy of further exploration, not only with a view to the ores of copper, but to the chance that the more valuable ores of cobalt may be found in the lode."

"In conclusion I may remark, that I have seen no location on the north shore of Lake Superior where copper is so widely distributed as it appears to be on the Cape Mamainse location, and feel convinced that a moderate outlay of capital expended in proving some of these veins would yield a rich return."

QUEBEC & LAKE SUPERIOR MINING ASSOCIATION.

LETTER FROM DR. T. STERRY HUNT.

BOSTON, MASS., *Jan. 25th*, 1876.

W. W. STUART, Esq.,

PRES'T. Q. & L. S. M. A.

DEAR SIR,—I have carefully looked over your late pamphlet containing notices of the mining lands of the Quebec and Lake Superior Mining Association, including extracts from the "Geology of Canada," all of which are correct and authentic. I am glad to re-affirm the favorable opinion regarding these lands expressed by me in my extended Report to the Association in Sept., 1872, and also in my condensed Report of 5th December, 1872, (which is printed in the pamphlet). The studies which I have since that time made of the similar region of the south shore of Lake Superior, and of the results there obtained in mining, leave no doubt in my mind that an intelligent working of your own extensive properties, will lead to the development of important mines of native copper. The operations many years since at the Quebec Mine, on the west side of Michipicoten Island, showed a large deposit of rock unusually rich in this metal; and I feel confident that its re-opening with the knowledge and the skill of the present day, will prove very satisfactory. I hope that your attention will also be turned to the old mine on the north side of the same island, where were obtained the remarkable ores of nickel with native silver, described and analyzed by me many years since.

Wishing you in your enterprise all that success which your zeal and your practical skill so well deserve,

I remain, my dear Sir,

Very faithfully yours,

T. STERRY HUNT.